

WHAT IS CLAIMED IS:

1. A method of manufacturing an optical element comprising at least a plurality of pixels formed on a substrate and partition walls arranged respectively
5 between adjacent pixels, said method comprising steps of:
forming partition walls of a resin composition on a substrate;
performing a dry etching process of irradiating
10 the substrate carrying said partition walls formed thereon with plasma in an atmosphere containing gas selected at least from oxygen, argon and helium;
performing a plasma treatment process of irradiating the substrate subjected to said dry etching
15 process with plasma in an atmosphere containing at least fluorine atoms; and
forming pixels by applying ink to the areas surrounding by the partition walls by means of an ink-jet system.
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2. A method of manufacturing an optical element according to claim 1, wherein
the surface coarseness of the partition walls is greater after said plasma treatment process than before
25 said dry etching process.

3. A method of manufacturing an optical element

according to claim 1, wherein

said partition walls are formed from a resin composition containing carbon black.

5 4. A method of manufacturing an optical element according to claim 3, wherein

the arithmetic mean deviation (Ra) of the surface of the partition walls after said plasma treatment is between 3nm and 50nm.

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5. A method of manufacturing an optical element according to claim 3, wherein

the contact angle of the surface of the partition walls relative to pure water is not smaller than 110° and that of the surface of the substrate relative to pure water is not greater than 20° after said plasma treatment process.

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6. A method of manufacturing an optical element

20 according to claim 1, wherein

the gas introduced in said plasma treatment process is at least a halogen gas selected from of CF₄, SF₆, CHF₃, C₂F₆, C₃F₈ and C₅F₈.

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7. A method of manufacturing an optical element according to claim 1, wherein

the gas introduced in said plasma treatment

process is at least a mixture of a halogen gas selected from CF_4 , SF_6 , CHF_3 , C_2F_6 , C_3F_8 and C_5F_8 and O_2 gas and the mixing ratio of O_2 gas is not greater than 30%.

5 8. A method of manufacturing an optical element according to claim 1, wherein

 said ink contains at least a setting ingredient, water and an organic solvent.

10 9. A method of manufacturing an optical element according to claim 1, wherein

 said method is adapted to manufacture a color filter where said substrate is a transparent substrate and said partition walls are provided by a black
15 matrix.

 10. A method of manufacturing an optical element according to claim 1, wherein

 said method is adapted to manufacture an
20 electroluminescence element where said pixels are formed by a light emitting layer and said electroluminescence element comprises a pair of electrodes sandwiching said light emitting layer.

25 11. A method of manufacturing an optical element according to claim 1, wherein

 after said plasma treatment process for irradiating said dry-etched substrate with plasma, the

plasma-treated substrate is subjected to a water treatment process.